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ABSTRACT

One of a series of three self-instructional units, these materials are aimed at helping British hotel and catering managers improve profits and/or reduce costs in their areas of responsibility. Following a paragraph on how to use the unit and an introduction, section 1 covers control levels as the framework for making decisions. The section includes these trainee objectives and pencil and paper activities to help trainees meet them: (1) identify the appropriate control level for a given management position; and (2) outline the involvement that a department or unit manager in a hotel or catering business should have in pricing, investment, and budget preparation. Section 2 covers pricing decisions and includes pencil and paper activities to help trainees meet these objectives: (1) identify the minimum price necessary to cover marginal costs; (2) understand the psychological aspects of pricing that influence sales volume; (3) identify opportunities for using differential pricing in hotel and catering businesses; (4) understand how to review prices, based on past data and competitive information; and (5) understand how to use backward pricing techniques for new businesses. Section 3 covers investment decisions and includes pencil and paper activities to help trainees meet these objectives: (1) understand the difference between revenue earning and defensive investments; (2) estimate the cash flow from investments, taking taxation into account; and (3) use discounted cash flow techniques to evaluate investment decisions. (CML)

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MAKING FINANCIAL
DECISIONS

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Financial Management
MODULE

MAKING FINANCIAL DECISIONS

OPERATIONAL MANAGEMENT PROGRAMME

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MAKING FINANCIAL DECISIONS

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HOW TO USE THIS UNIT

The material in *Making Financial Decisions* is presented in a self-study format. Most of the pages require you to make a response to the information presented, or to consider what you might do on the basis of your experience and knowledge. Space is provided below these activities for you to write your answers. Possible responses or appropriate guidance is given on the opposite page (when you should cover it up to avoid influencing your answer) or overleaf.

INTRODUCTION

The overall aim of the three financial management self-study units and the one-day HCTC courses is to enable hotel and catering managers to improve profits (and/or reduce costs) in their area of responsibility. This unit is divided into three sections covering:

- control levels (the framework for making financial decisions)
- pricing decisions and techniques
- assessing investment opportunities.

Controlling Costs deals with the principles of cost control, the role of sales forecasting in effective cost control, how to forecast, measure and control material costs, calculating potential sales values, estimating and controlling employment costs, staff productivity and cash flow management.

Interpreting Financial Results looks at financial information needs, some of the point of sales and computer-based information systems available, how different receipts and expenditures affect profit measurement, the analysis of variances and trends, forecasting and budgeting for business planning and control.

Delegates on HCTC courses receive a number of assignments.

SECTION 1
Control levels

After completing this section you will be able to:

- identify the appropriate control level for a given management position
- outline the involvement that a department or unit manager in a hotel or catering business should have in pricing, investment and budget preparation.

MAKING FINANCIAL DECISIONS

Financial planning is deciding what needs to be done in order to achieve the profit objectives of the business.

The primary tool of financial planning is called the *budget*. A budget is simply a statement of intention in financial terms. It shows for a certain period of time how a business intends to use its financial resources, and the revenues, expenses and profits which will result from it.

Part of every budget will be a planned *profit and loss statement*, usually broken down to give detailed revenue and expense targets for each week of the year.

Financial control is concerned with ensuring that plans are successfully put into operation by monitoring progress to check that objectives are likely to be achieved. If circumstances require corrective action must be taken. Control is effected by:

- measuring actual performance — for example the weekly sales revenue
- comparing this with the planned performance — with the budgeted figure
- taking action which will correct any shortfall in performance.

Profit objectives need to be set for a business as a whole. Explain below why these should be broken down into sub-objectives for the various operating departments of a business.

Setting profit sub-objectives for operating departments:

- improves business performance by giving managers and supervisors targets to aim for
- enables profit performance to be measured for each department
- ensures separate plans are made to improve departmental profitability.

As a business grows in size amd complexity the original owners delegate responsibility for financial planning and control to other people. Shareholders appoint company directors to look after their interests. Similarly the directors appoint managers who are given the responsibility and authority to carry out the directors' policies.

Organisation charts portray responsibility relationships in the form of a pyramid. For example:

Profit is the excess of income over expenses, and it is usually possible to measure profit at each level of the pyramid. These different levels of profit are called *control levels*. As far as possible each control level corresponds with the responsibility level on the organisation chart and can be used as a measure of performance of the different managers, directors and so forth.

Note in the appropriate place below what control levels could be used for each management level in Criterion Hotels plc.

Position	***Control level***
Hotel manager	
Regional manager	
General manager	
Director	

Some recommended control levels are:

Position	Control level
Hotel manager	Hotel net operating profit
Regional manager	Regional operating profit — total net operating profit of hotels in region less regional office costs
General manager	Trading profit — total regional oprating profits less headquarters costs
Director	Trading profit after tax and interest charges

There is no prescribed way of determining control levels. Each business does this according to its own management philosophy.

Each manager is responsible for the financial performance of subordinate managers. However, by pushing profit responsibility as far down the hierarchy as possible, the contribution and effort of individuals — and ultimately the performance of the business as a whole — will improve.

Managers have a duty to find the right control level to stimulate and develop their subordinates' performance and to delegate profit responsibility to that level. Managers should also ensure that subordinates have the skills and abilities necessary to carry out those responsibilities.

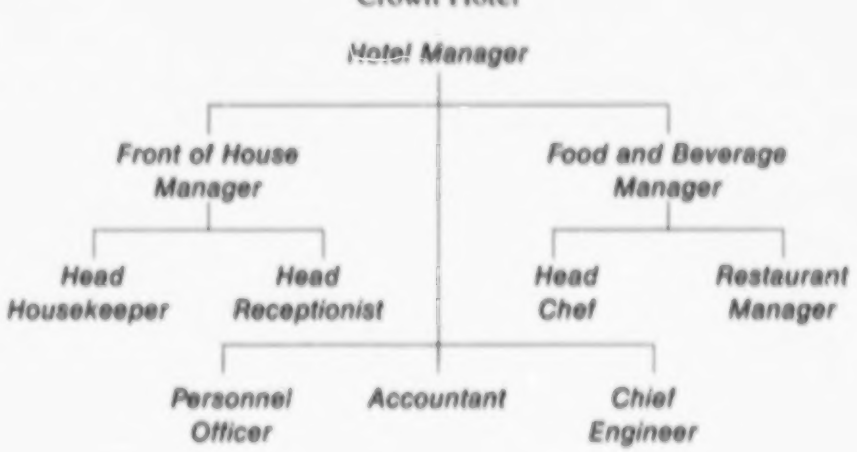
For managers to be effective within their own control levels they must:

- have *authority over the expenses* for which they are responsible
- be able to *influence the revenues* for which they are responsible
- and it must be possible to *measure these revenues and expenses* realistically.

If these conditions cannot be met, then the control levels have been incorrectly selected.

If you were manager of the Crown Hotel describe below what control level you would select for:

- *Front of house manager*
- *Food and beverage manager*



The control level in both cases is:

- departmental operating profit (DOP).

The control level which relates to responsibilities of departmental or unit managers is the *departmental operating profit*, or *unit operating profit*. (Businesses may use other descriptions.) This is the lowest control level where both revenue and related expenses are the responsibility of one person. A segment of the hierarchy where both revenue and related expenses are the responsibility of one person is called a *profit centre* or an *operating department*.

In the Crown Hotel organisation chart the reception could not be deemed a profit centre as it does not encompass the costs of servicing the bedrooms. Similarly the restaurant could not be defined as a profit centre because the direct costs of food production are not the responsibility of the restaurant manager. However the food and beverage department is a profit centre because all the revenues and expenses related to food and beverage sales are the responsibility of one manager. Segments of the hierarchy below profit centre level are called *cost centres* or *service departments*.

Broadly, departmental operating profit (DOP) is calculated as the *net sales revenue* of a department less the *direct costs* of that department. (Direct costs are those costs which are incurred as a result of the operation of that department.)

The selection of revenue and expense categories for inclusion in the calculation of departmental operating profit varies from business to business. Sometimes it is limited by the ability of the accounting system to measure direct expenses adequately. As a general guide these revenues and expenses would be included in the calculation of DOP:

	Food and beverage department	**Rooms department**
Net sales revenue	Restaurant revenue Bar revenue Banqueting revenue	Bedroom revenue
Cost of sales	Food commodities Beverage commodities	not applicable
Direct wages (including staff meals and accommodation)	Restaurant staff Kitchen staff Bar staff	Reception staff Housekeeping staff Porters
Other direct costs	Food and beverage uniforms Cutlery, utensils Food and beverage laundry	Rooms uniforms Cleaning materials Rooms laundry

Many costs incurred in operating the hotel, for example rent, rates and administration costs, have not been included above. Explain below whether you think it is helpful to include a share of these overhead costs in the calculation of DOP and why.

It is not particularly helpful to include a share of overhead costs like rent in the calculation of DOP because the departmental manager cannot control such costs. It is more appropriate for control of these costs to rest with the hotel manager.

In some businesses a departmental operating statement may contain a share of overhead costs which are not within the control of the departmental manager. For example the food and beverage department might be given an arbitrary share, say 50%, of the administration costs of the personnel manager and hotel manager. These shared costs are called *allocated costs*.

If you are allocated costs on your departmental operating statement ask yourself if you can do anything to control them. If the answer is no, then ignore them completely and concentrate on the direct costs which you can control.

Note below what financial responsibilities the front of house manager at the Crown Hotel should have and who else should be involved in the financial decisions that have to be made.

The rooms department manager should preferably be responsible for achieving satisfactory levels of departmental operating profit. Responsibility for any allocated costs should rest with the hotel manager.

A 'satisfactory level' suggests some standard for comparison which should be contained in a budget. The rooms department manager would be expected to take the initiative in the budget preparation and agree the budget with the boss (who has to ensure that the budget meets corporate needs) and with subordinates (the housekeeper and head receptionist need to be committed to achieving the budget).

Wages and other operating costs should be controlled and kept in line with standards even if overall profit objectives are being achieved. Variances should be analysed and corrective action taken.

The rooms department manager would also monitor prices and prepare well argued proposals for price reviews. However the final decision on pricing should rest with the hotel manager. Similarly the rooms division manager should assess the financial implications of investment in new equipment or major refurbishment, and should produce well-structured arguments for investment in his or her area of responsibility. The final decision concerning investment rests with the directors of the company.

MAKING FINANCIAL DECISIONS

If you want to be successful in business, you need to clarify what your own financial responsibilities are and to find out what your boss expects of you. You need to get involved in decisions concerning the budget preparation, pricing and investment for your area of responsibility. This may mean taking the initiative in order to influence your boss to adopt your ideas. It is often no decision rather than the wrong decision which results in business failure.

SECTION 2
Pricing decisions

After completing this section you will be able to:

- identify the minimum price necessary to cover marginal costs
- understand the psychological aspects of pricing which influence sales volume
- identify opportunities for using differential pricing in hotel and catering businesses
- understand how to review prices, based on past data and competitive information
- understand how to use backward pricing techniques for new businesses.

A well established law of economics which says that the higher the price of an item the lower the volume sold has far reaching implications for pricing in the hotel, catering, leisure and tourism industry.

Imagine you are selling toffee apples at a garden fête. Each toffee apple costs 9p to produce. From previous experience, you estimate that a selling price of 30p would generate 80 sales. At 10p, 300 could be sold. At 50p only 20 could be sold. Dropping the price below 10p would produce no extra sales because of the limited number of people at the fête who like toffee apples. Increasing the price above 50p would rapidly bring sales down to nil. Calculate below how much gross profit will be made at each price level.

Selling price	10p	30p	50p
Number sold	300	80	20
Total sales	£30.00	£24.00	£10.00
Cost of toffee apples sold	£27.00	£7.20	£1.80
Gross profit	£3.00	£16.80	£8.20

Selling 80 at 30p produces the most gross profit. Surprisingly perhaps, the highest volume of sales produces the least gross profit.

There is never a clear-cut ratio between the price charged and the profit made, which is why pricing is an important and difficult decision for any manager. Pricing determines not only the profit contribution made by each unit or item sold, but also influences the total volume. The price which gives the greatest total profit contribution is called the *optimal price*.

Pricing decisions are based on the answers to two key questions:

- What is the minimum price which a business can charge?
- What is the maximum price a customer will pay?

THE MINIMUM PRICE

In the example of selling toffee apples any price of more than 9p would make a contribution to profit. The minimum price which a business can charge must cover the additional costs incurred by increasing sales. In the example that additional cost was the cost of the toffee apple (in many catering businesses the additional cost will be the portion cost).

On the following list indicate those areas in which additional costs would be incurred if one more hotel bedroom was sold in the Crown Hotel:

Head housekeeper's salary

Housekeeping staff's wages

Laundry

Guest soap, stationery

Electricity

TV licence

Rent

Cleaning materials

Laundry (towels and sheets), guest soap, stationery (used by guest), electricity (for hot water, lighting and heating) and cleaning materials (for servicing room) would increase in cost. It is unlikely that salaries or wages would have to be increased to service just one extra room and there would be no change to the rent or TV licence costs.

The additional cost incurred by increasing sales by one unit or item (for instance a hotel bedroom) is known as the *marginal cost*.

Imagine you were the manager of the Crown Hotel. One night at 11.30 a man walks into reception and asks the price of a room. The advertised rate is £28.50 but the man says he can only afford £17.25. You know there are 35 empty rooms that night and the marginal cost of one bedroom is £5.80. Explain below whether you would increase the hotel's profit if you accepted his offer and why.

A price of £17.25 would increase the hotel's profit because it more than covers the marginal cost. The difference between the selling price (excluding VAT) and the marginal cost is called the *contribution*.

$$\frac{£17.25 - 5.80 = 15.00 - 5.80 = £9.20}{1.15}$$

Any price over £6.67 (£5.80 x 1.15) would make a contribution (VAT is assumed to be 15% in this example).

The marginal cost is likely to be different when considering the sale of several units. For example a tour operator is interested in booking a block of 20 rooms in the Crown Hotel for seven days in November. This is during the low season when at least 30 rooms are empty every night of the week, and consequently staff are reduced to the minimum. One additional member of staff will be required for one week to handle the increased workload and the extra costs for selling 20 rooms for seven days are therefore:

Marginal cost (£5.80) x 20 x 7 =	**812**
Extra wages	**85**
	£897

The minimum price that could be charged to the tour operator would be £897 plus VAT at 15%, that is £1032. Any price above £1032 will increase profits.

Marginal cost determines the minimum price a business can charge. Any price which more than covers the marginal cost will make a contribution and improve profits.

THE MAXIMUM PRICE

Determining the maximum price which a customer will pay requires an awareness of human paychology. For instance some customers will readily pay £5.50 for a round of sandwiches in a hotel lounge whereas others might walk out as soon as they realise the cost.

Describe below the factors which you think might influence customers' reactions to a price.

Frequency of purchase Frequent purchasers develop a reference price depending, for example, on where they live and the type of pubs they visit. A reference price for a pint of bitter might be £1.00 or £1.20 and this determines a customer's reaction when confronted with new products and prices.

Opportunity to compare prices Some purchasers have a sound knowledge of competitor's prices, through hotel guide books for instance.

Appreciation of price structure If service charge and/or cover charge are not included in menu prices — still the practice in some restaurants despite the code of practice — customers may not be aware of the total price until the bill arrives. The same is true of à la carte menus. Many customers prefer an inclusive price and complex price structures appear to be a deterrent.

Discretionary spending level This is the amount of money which remains after essential living expenses have been paid. Generally customers with greater levels of discretionary spending are less aware of prices.

Price as a quality indicator Many customers are wary of items which are promoted as being of high quality, but are low in price. It appears that most customers have a quality-price association and it is unwise to move too far above or below that price level. Furthermore the price of some items seems to have a greater effect on the overall view of value for money. For example the price of a steak on the menu may be more crucial to the customers' assessment of value than the price of a dessert.

Price awareness and perception of price as a quality indicator vary from customer to customer and from business to business. There are no easy rules which will tell you what price your customers will pay. You need to watch the effect of price changes, observe competitors and talk to customers. This is the only way to make informed pricing decisions.

So managers have to choose a price somewhere between the minimum price the business can charge while still making a profit, and the maximum price the customers will pay. This range is called the *range of price discretion*.

DIFFERENTIAL PRICING

It is possible to distinguish several groups of customers, or market segments, whose response to prices will be similar. For instance:

- a family on a bargain break weekend
- business people entertaining clients on expenses
- friends out for a celebratory meal
- a sales executive staying alone in the hotel.

The challenge for many establishments is to design a product with varying prices which will enable them to get the best possible contribution from each market segment. At the same time it is important to consider how the product will be sold and sales promotion and personal selling skills are essential if profit is to be maximised.

Most hotel, catering, leisure and tourism businesses have a much wider range of price discretion than, say, retailers. The price of a tin of baked beans is unlikely to vary by more than a few pence whereas the price of a hotel bedroom with similar facilities and in a similar location can have a price discretion as wide as £40. While this makes pricing decisions more complex it does widen the scope for increasing profits.

Businesses with fixed capacity and fluctuating demand use pricing as a tool for increasing sales during periods of low demand. British Rail provides a good example.

Passengers on British Rail can buy a variety of cut-price tickets — Awaybreak, Saver and so on — provided they fit into certain categories of traveller. Explain briefly below why such a flexible pricing policy works particularly well for an organisation like British Rail (think in terms of what types of people use trains, and when — and remember the aim is to get more people to use the railways). Using your own experience, and information leaflets available from British Rail, name the cut-price tickets designed to appeal to the following types of passenger:

- *low income (student, families, OAPs)*
- *adult staying with family or friends more than 30 miles away*
- *adult sightseer from the Home Counties in London for the day.*

How does British Rail ensure that standard (full) fare paying passengers do not trade down to a cheaper ticket for what is, after all, exactly the same service — travel from A to B?

The varied pricing structure works well for an organisation like British Rail because, in order to provide an adequate service, trains need to run throughout the day regardless of how many passengers are on board. This means that, apart from the morning and evening rush hours, trains usually run below full capacity. It costs about the same to run a train which is almost empty as to run a train which is full. So it makes sense to encourage passengers who do not have to use the train, or who can choose when to travel (unlike rush-hour commuters) by offering cheaper rates than the standard rate.

Low income travellers can buy the Family Railcard, the Young Person's Railcard, or the Senior Citizen Railcard which entitles them to special rates.

An adult staying with friends or relatives would probably buy an Away Break ticket.

An adult from the Home Counties sightseeing around London would buy a One-day Travelcard.

British Rail ensures that standard fare paying passengers (mainly those who need to use the train during peak times) cannot take advantage of the cheaper fares mainly by restricting the times of travel to weekends and other non-peak times during the week, say after 9.30 or 10.00 am.

Hotel, catering, leisure and tourism establishments face similar pricing decisions to British Rail. They have similar scope for price discretion and face fluctuations in the level of demand. There are also a number of different market segments, each with its own maximum price threshold.

The technique of selling what is basically the same product to different groups of people at different prices is called *differential pricing*.

Describe below how hotels and restaurants could:

- *use differential pricing to help them fill troughs in demand*
- *make minor modifications to the product to justify charging higher or lower prices to certain market segments.*

Differential pricing requires careful thought to prevent existing users trading-down. Some devices are:

- Reduced rates for low season or weekend occupancy if booked a prescribed number of days in advance (to prevent full business users from trading-down).
- Reduced rates for low season or weekends for double occupancy only (again excluding most business users but encouraging tourists).
- Reduced rates for low season if stay exceeds a prescribed number of days (excluding most business users but encouraging longer stay tourists).
- The use of a lower price table d'hôte menu and a higher price à la carte menu to meet the requirements of different market segments
- reduced price menu for low demand meal periods, for example at lunch time or early evening pre theatre dinner
- reduced price menu for low demand days of the week, for example Sunday in city centres or Monday in the provinces.

Minor modifications to the product to justify charging higher or lower prices to certain market segments include:

- executive rooms (or floors) for people who are prepared to pay more for a prestige product
- family rooms for family groups who would otherwise not be able to afford to stay
- special rates for sea-view or balcony
- special menu for tea dance, dinner/dance and so on.

Differential pricing to maximise the profit from all market segments requires creative thinking by managers, and the ability on the part of staff to assess customers and sell the right product with the right price to meet their needs.

THE PROBLEMS OF INCREASING PRICES

Most prices increase every year. Deciding when and how to increase selling prices is a key management skill. If the increase is too little or too late then profits are eroded by rising costs. If the increase is too much or too soon then competitors gain business at your expense.

Most businesses examine their prices and implement selected price increases at regular intervals, say every six months. This periodic exercise is known as a *price review* which usually coincides with the reprinting of menus, brochures and other merchandising material.

Usually price reviews are undertaken to maintain existing profit levels by recovering the effect of cost increases. Occasionally price reviews are undertaken to improve existing profit levels by implementing *real price increases* which recover more than cost increases.

Generally when the price of a unit goes up the volume of sales goes down. This relationship is called *elasticity of demand*. The problem for managers is that they cannot accurately forecast how much volume drop will result from a given price for a certain product because:

- different purchasers react to the same price increase in different ways
- different products elicit different price reactions from the same purchaser for example one penny on a cup of tea tends to produce a far greater reaction than one penny on a packet of biscuits
- the effect of a price increase is also dependent on competitors' prices and purchasers' level of price awareness
- price increases that move through a *price threshold* produce a particularly strong reaction. For example most purchasers perceive that the difference between 99p and £1.00 is much greater than the difference between £1.03 and £1.04.

Managers can improve their chances of making successful pricing decisions by:

- monitoring competitors' prices
- analysing the impact of previous price reviews (for instance the effect on sales and profits, and comments made by customers)
- considering the degree of risk associated with price changes.

There are two factors which determine the degree of risk associated with price increases/decreases:

- the contribution made by the product to overall sales
- the unit or portion cost of the product (which determines its contribution to overall profits).

Any change to the price of a product which accounts for a large proportion of overall sales and makes a significant contribution to profits carries a considerable risk. In the following example getting the price right is much more important for product X than for product Z.

	Selling price	Portion cost		Contribution per portion	Average weekly sales	Contribution
	£	£	%	£	units	£
Product X	0.50	0.24	48	0.26	1000	260
Product Y	0.60	0.38	63	0.22	1100	242
Product Z	0.70	0.29	41	0.41	200	82

Products which have a higher unit or portion cost percentage are less susceptible to a drop in volume than those with a lower unit or portion cost.

	Selling price	Portion cost		Contribution per portion	Average weekly sales	Contribution
	£	£	%	£	units	£
Product A	0.20	0.08	40	0.12	1000	120
Product B	0.20	0.18	90	0.02	1000	20

Notice that products A and B have the same selling price and the same average sales per week. If the same price increase is imposed on the two products (up from 20 to 22p) with a similar effect on sales (down from 1000 to 850) then the contribution of product A decreases whereas the contribution of product B increases.

	Selling price	Portion cost		Contribution per portion	Average weekly sales	Contribution
	£	£	%	£	units	£
Product A	0.22	0.08	36	0.14	850	119
Product B	0.22	0.18	82	0.04	850	34

On the whole there is less risk associated with price changes on products which have a relatively high unit or portion cost.

Reviewing prices is a complex task and unfortunately there are no simple rules to guarantee the best pricing decisions. It is very unlikely that increasing all prices by a fixed percentage, say 8%, will produce the best profit improvement because each product has its own:

- elasticity of demand
- price thresholds
- price awareness
- degree of risk
- competitive position.

Good judgement — based on a sound understanding of the particular market and data relating to previous price reviews, competitors' current prices and current sales mix and costs — is the most successful way of reviewing prices in the hotel and catering industry.

BJs are about to undertake their regular six-monthly price review. Since the company's last price review operating costs (wages, rates, electricity and so forth) have increased by £120 per week.

In addition the purchasing contracts for all food commodities have been renegotiated. The standard recipes have been revalued, and the following changes in portion costs will take effect on the day of the price review and will last for the next six months.

Item	Average sales per week units	Portion cost Old £	New £	Difference £	Effect on average weekly sales £
Burger	3330	0.32	0.36	0.04	+ 133.20
¼ Pounder	1210	0.72	0.72	—	—
French fries	3150	0.14	0.16	0.02	+ 63.00
Shake	900	0.26	0.28	0.02	+ 18.00
Apple pie	585	0.28	0.28	—	—
Large coffee	1440	0.08	0.08	—	—
					+ 214.20

BJ's objective is to implement a price review which will help to recover these cost increases (operating costs up by £120, food costs up by £214.20, total £334.20).

BJs has kept a careful record of what its three competitors charge and the current situation is:

	BJs	Marcia's	Burger Shop	Red's
	£	£	£	£
Burger	1.02	1.10	1.10	1.12
¼ Pounder	1.96	1.92	1.92	1.94
French fries	0.70	0.70	0.70	0.72
Shake	0.76	0.78	0.82	0.80
Apple pie	0.52	0.56	0.52	0.52
Large coffee	0.66	0.66	0.68	0.70

The situation before and after the last price review was as follows (BJs has kept careful records):

	Selling price		Portion cost		Contribution per portion	Average weekly sales	
	inc VAT	less VAT (15%)					Contribution
	£	£	£	%	£	units	£
Before							
Burger	0.98	0.85	0.32	38	0.53	3200	1696
¼ Pounder	1.94	1.68	0.68	40	1.00	1220	1220
French fries	0.70	0.61	0.14	23	0.47	3150	1481
Shake	0.72	0.63	0.26	41	0.37	940	348
Apple pie	0.50	0.43	0.24	56	0.19	585	111
Large coffee	0.66	0.57	0.06	11	0.51	1440	734
							5590
After							
Burger	1.02	0.89	0.32	36	0.57	3300	1881
¼ Pounder	1.96	1.70	0.72	42	0.98	1210	1186
French fries	0.70	0.61	0.14	23	0.47	3150	1481
Shake	0.76	0.66	0.26	39	0.40	900	360
Apple pie	0.52	0.45	0.28	62	0.17	585	99
Large coffee	0.66	0.57	0.08	14	0.49	1440	706
							5713

Study the BJ figures and decide how you would adjust the company's prices. As a first step make a comparison of the situation before and after the last price review, looking at the change in:

- *selling price (excluding VAT)*
- *average sales per week (units and contribution)*

The effects of the last price review by BJs were as follows:

	Selling price excluding VAT		Average weekly sales		Contribution	
	£	%	units	%	£	%
Burger	+ 0.04	+ 4	+ 100	+ 3	+ 185	+ 11
¼ Pounder	+ 0.02	+ 1	- 10	- 1	- 34	- 3
French fries	—	—	—	—	—	—
Shake	+ 0.04	+ 6	- 40	- 4	+ 12	+ 3
Apple pie	+ 0.02	+ 4	—	—	- 11	- 10
Large coffee	—	—	—	—	- 29	- 4
					+ 122	+ 2

Pricing is not an exact science and many different approaches can be taken. Here are some suggestions:

- The burger makes the largest contribution and appears to experience little volume drop when prices are increased. Increase the price to £1.12 in line with the competition.
- French fries are the next biggest contributor, and have not been increased in price for 12 months. Increase the price to 75p.
- The quarter pounder is on the edge of the £2.00 threshold. Increase the price to £1.98 and try to hold the price at that level for 12 months until the competitors' prices are closer.
- Coffee is a high volume item which has not increased in price for 12 months. Add 4p to the selling price.
- Although the shake is cheaper than competitors' products price increases appear to produce substantial volume decrease. Nevertheless a 6p increase will almost maintain the contribution from this product.
- Apple pie is a poor contributor, but appears to withstand price increases well. Increase the selling price to 56p.

Complete the table below to show the anticipated effects of the increase in BJ's selling prices which have been suggested on the previous page.

	Selling price		Portion cost		Contribution per portion	Average weekly sales	
	inc VAT £	less VAT (15%) £	£	%	£	units	Contribution £
Burger						3300	
¼ Pounder						1210	
French fries						3150	
Shake						864	
Apple pie						585	
Large coffee						1440	

How successfully has BJ met its objective (to recover cost increases of £334)?

	Selling price		Portion cost		Contribution per portion	Average weekly sales	
	inc VAT £	less VAT (15%) £	£	%	£	units	Contribution £
Burger	1.12	0.97	0.36	38	0.61	3300	2026
¼ Pounder	1.98	1.72	0.72	42	1.00	1210	1210
French fries	0.75	0.65	0.16	25	0.49	3150	1550
Shake	0.82	0.71	0.28	40	0.43	864	372
Apple pie	0.56	0.49	0.28	60	0.21	585	123
Large coffee	0.70	0.61	0.08	13	0.53	1440	763
							6044

The review was arrived at through trial and error, attempting various permutations until a satisfactory series of price increases was found. The contribution has increased by £332 per week (up from £5712 to £6044) nearly the same as the cost increase of £334.

NEW BUSINESS PRICING

In the short term a new business must base its selling prices on what the customers are likely to be willing to pay. The sales income should at least cover the marginal cost of the products/services sold.

In the long term the business must sell a range of products which produce a total contribution that not only covers fixed costs but produces the required profit.

For most hotel and catering firms what is known as *backward pricing* presents a logical approach. Start with a clear understanding of the potential customers and the competition.

- what the customers want
- how much the customers will pay
- how many customers there will be.

Say the answers are:

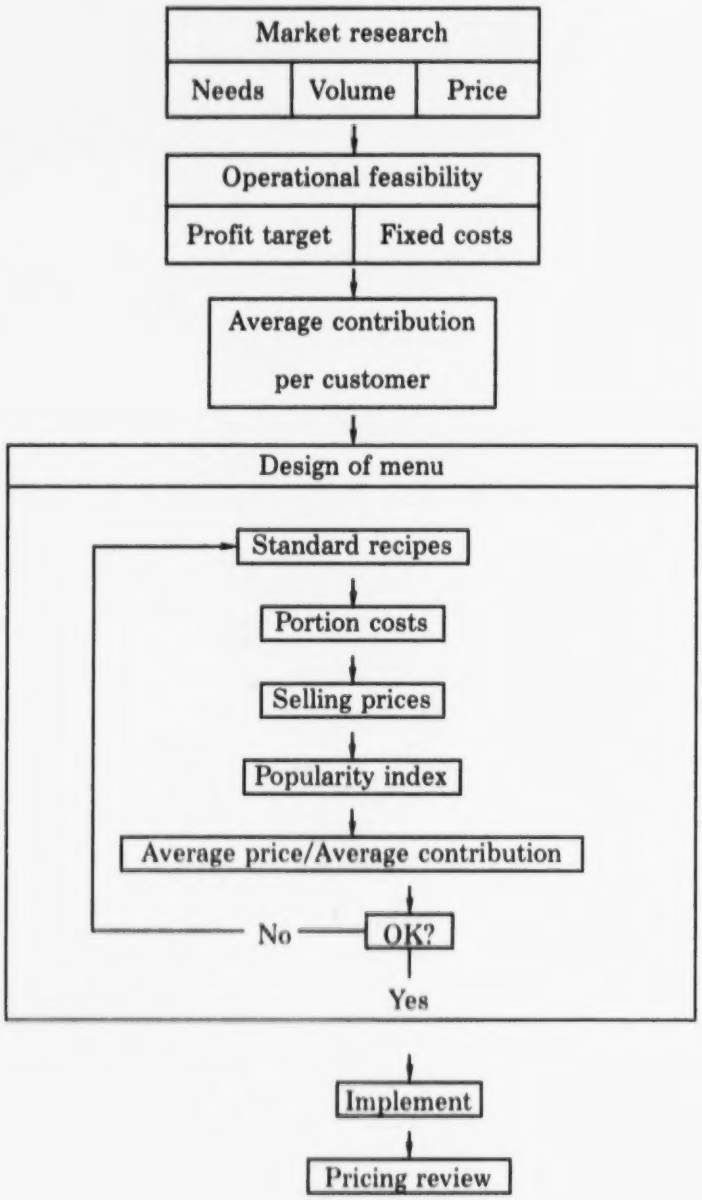
- a two course meal with a glass of wine
- £9 to £11 inclusive
- about 550 customers per week.

The next step is to work out what the fixed costs of the business are likely to be and to set a profit target which will provide a reasonable return on investment:

- fixed costs (wages, rent, rates and so forth): £2180 per week
- profit target: £600 per week
- average contribution per customer: £5.06 (£2780 ÷ 550).

The final stage of backward pricing is the design of a product which will yield the appropriate selling price and average contribution per unit sale. For a catering establishment this involves preparing standard recipes, calculating portion costs, forecasting the popularity of different menu items, fixing selling prices and calculating the average price and contribution per customer. The first attempt is unlikely to produce the required result and refinements will have to be made.

The approach of backward pricing is to produce products which a sufficient number of customers want and can afford to buy. For a restaurant there is considerable scope for refining the items on the menu but if it proves impossible to design a menu which will meet financial requirements then the feasibility of the whole venture should be carefully re-examined. If an acceptable menu can be implemented a price review should be undertaken after three months or so to assess the actual sales.



A commonly used method of pricing is *cost plus*, by which specific gross profit margins are applied to products to determine their selling price.

Mrs Adams is starting a restaurant business. She has drawn up a menu and calculated portion costs. A restaurateur she knows explains how to use the cost plus method, while varying the profit margin according to the popularity of the dish, for example:

	Food cost %	**Gross profit** %
Starters	*25*	*75*
Main courses	*40*	*60*
Vegetables	*35*	*65*
Sweets	*40*	*60*
Coffee	*20*	*80*

So for Sirloin Steak Adams *with a portion cost of £2.30 the selling price is as follows:*

40% = £2.30

Selling price = 100%, that is $\frac{2.30}{40} \times 100 = £5.75$

VAT would normally have to be added to this, when Mrs Adams would put the dish on her menu at £6.60 (5.75 x 1.15).

Mrs Adams was very pleased to be given this advice, but think of the implications of cost plus pricing for hotel, catering, leisure and tourism establishments you know. Briefly describe your views below.

The cost plus method is simple and easy to apply. It is widely used in the industry and in many cases produces adequate results. The major weakness of the method is that it takes no account of what customers are prepared to pay. In a highly competitive situation, or where price awareness is high, the business is likely to lose out. It may also miss the opportunity of making extra profit on items where the perceived value is high and customers would happily pay more.

The next section looks at investment decisions.

SECTION 3
Investment decisions

After completing this section you will be able to:

- understand the difference between revenue earning and defensive investments
- estimate the cash flow from investments, taking taxation into account
- use discounted cash flow techniques to evaluate investment decisions.

MAKING FINANCIAL DECISIONS

Managers know their units or departments better than anyone else and will often have good ideas for changes which will improve the business. But however good these ideas are they can often be overlooked because the managers do not know how to present their arguments convincingly to the people (directors or owners, for example) who make the final decisions on capital projects.

The objective of nearly all businesses in the private sector is to make a profit. Even organisations in the public or welfare sector are under increasing pressure to come up with good business ideas.

In order to make a profit a company will normally make a substantial *capital expenditure* — in other words will acquire something, say a building, piece of equipment or land — which is expected in a fixed period of time to pay for itself and make a profit for the company. Capital expenditure incurred to improve profitability is known as a *revenue earning project*.

Businesses have other objectives apart from making a profit. Sometimes capital expenditure is necessary in order to:

- comply with legislation, for example the Health and Safety at Work Act
- replace existing assets which are worn out
- attain a particular objective such as extending and refurbishing staff accommodation.

In such cases the capital expenditure is not intended to improve the short-term profitability of the business but to ensure its long-term survival, in other words as a *defensive project*.

Assessing a defensive project requires considerable experience in weighing the cost of the project against the risks of not incurring the expenditure. For example improving staff facilities will incur a considerable expenditure but the profitability of the firm will only improve if the change in staff morale and productivity is significant (and not counteracted by other developments, for example pay increases failing to keep up with inflation).

In contrast, to assess the commercial viability of a revenue earning project requires relatively simple techniques. The aim is fairly straightforward: to find out whether more profit will be generated by investing in the particular project or by investing a similar sum elsewhere, say in a building society.

A restaurant manager has identified various changes she would like to see made in her department. Indicate below how she could justify each scheme to her directors — as a revenue earning project or as a defensive project and explain briefly why, by presenting each case in this way it is more likely to be implemented.

	REVENUE EARNING	DEFENSIVE
Clean exterior stonework of the building and improve exterior signing		
Buy an automatic glass washing machine for the bar		
Refurbish restaurant interior (last done eight years ago)		
Extend the restaurant by knocking a wall down and taking over some of the staff rest room (the restaurant is very busy)		
Improve the staff facilities (which are cold, unpleasant and too big)		
Replace the bottle hoist (beyond repair — crates have had to be carried up and down stairs for some time now)		

Most businesses spend money on revenue earning projects in preference to defensive ones. The restaurant manager stands a better chance of getting her schemes implemented if she presents them as revenue earning projects whenever possible.

Exterior stonework and signing

Arguing that the project would attract more customers is difficult as the restaurant is already very busy. An alternative would be to link this project with the refurbishment/extension schemes.

Glass washing machine

This would have to be presented as a defensive scheme, showing that it would result in staff savings.

Refurbishment

Show that improvements result in higher average spend (better product).

Extension

Show that improvements result in greater volume (increased capacity). The exterior cleaning, signwork and refurbishment might stand more chance of being successful if they formed an integral part of this scheme.

Staff facilities

Has to be presented as a defensive scheme, but could be linked with the refurbishment/extension.

Bottle hoist

Clearly a defensive project. A strong case can be made on health and safety grounds.

Your chances of getting such ideas implemented will be greatly improved if you can convince others of the scheme's revenue earning potential through cost savings or revenue improvements or by a combination of the two.

CASH FLOW FROM INVESTMENTS

If you were to invest £6000 in National Savings Certificates you would look forward to the return of your £6000 in five year's time, with inflation-proofing and an interest bonus.

Let's say the £6000 was used to buy a vending machine which will sell teas and coffees in a hospital waiting room. (Investments in productive assets such as a vending machine are different in that the sum invested is recovered in the lifetime of the project rather than at the end, for example when the National Savings Certificates are cashed in.) The other facts are:

- *Installing the machine will cost £160.*
- *Existing staff will be trained by the supplier (at no charge) to fill and service the machine.*
- *A maintenance agreement and insurance will have to be taken out at a cost of £200 per year.*
- *Electricity will cost £100 per year.*
- *Each cup of tea/coffee costs on average 16p and sells for 40p.*
- *5000 cups are likely to be sold each year.*
- *The machine is expected to have a ten year life.*
- *Depreciation has been calculated at £100 per year.*

Work out below what the cash inflow and outflow would be for each of the ten years of the machine's life. (Assume that inflation is zero for the purposes of this exercise.)

The cash inflow would be the same each year:

5000 cups sold at 40p = £2000

There would be an immediate cash outflow of £6000 for the machine plus £160 for installing it. In the same year there would also be a cash outflow for:

	£
maintenance and insurance	200
electricity	100
ingredient/cup costs (5000 x 16p)	800
	1100

This outflow would be the same each year. Depreciation is an expense not an expenditure, and therefore is not a cash outflow. No extra staff wages would be incurred.

The cash inflows and outflows can be subtracted to give the net cash flow (so the investment can be evaluated more effectively).

Year	Cash in	Cash out	Net cash flow
1	2000	7260	- 5260
2	2000	1100	+ 900
3	2000	1100	+ 900
4	2000	1100	+ 900
5	2000	1100	+ 900
6	2000	1100	+ 900
7	2000	1100	+ 900
8	2000	1100	+ 900
9	2000	1100	+ 900
10	2000	1100	+ 900
	20,000	17,160	+ 2840

The Bancroft Teacher Training College is considering turning some disused stables into a bar for the use of staff and students at a conversion cost of £76,000. Estimated annual operating costs are:

	£
wages	*24,000*
electricity, heating and related costs	*8,000*

Net sales are forecast to increase from £70,000 in the first year by £2000 per year up to a maximum of £80,000. The cost of sales is budgeted at 50% of net sales. Wages will not increase (zero inflation is assumed for this exercise).

The old stables are due to be demolished in seven years' time in order to build a new teaching block and this decision will not be affected by the proposed bar conversion.

Show your cash flow forecast for the project below.

Would you recommend the project proceeds? Briefly state your reasons.

Year	Cash in	Cash out	Net cash flow
1	70,000	143,000	- 73,000
2	72,000	68,000	+ 4,000
3	74,000	69,000	+ 5,000
4	76,000	70,000	+ 6,000
5	78,000	71,000	+ 7,000
6	80,000	72,000	+ 8,000
7	80,000	72,000	+ 8,000
	530,000	565,000	- 35,000

Many establishments in the welfare sector of the industry have to use up budget allocations for the year — unspent monies cannot usually be carried forward. If Bancroft College had the money available for the conversion and it was felt the extra facility would help attract students and staff to the college in the future, then the investment becomes an attractive option. Even though the overall cash flow is negative, there is a positive flow from the second year and these monies could help fund other improvements to the College.

A privately-run college might decide against the investment in view of the overall negative cash flow. The investment would be more attractive if the stables could be permanently retained as a bar and the new teaching block built elsewhere.

Whether the college was publicly or privately funded, the presence of a disused building on its campus could be considered an eyesore detracting from people's overall impression of the college and possibly encouraging vandalism. On this basis its short term use as a bar could be justified even if the net cash flow was less attractive.

THE EFFECTS OF TAXATION

When an investment appraisal is being considered it is essential that any taxation or investment incentives are taken into account. A favourable rate of return might be cancelled out by the tax due on it, whereas an investment incentive could make a doubtful project feasible.

Any limited company is liable to pay corporation tax on profits. The tax is paid in the following year, so if taxable profits of £15,000 are made in 1994 and corporation tax is 35%, then £5250 will be payable in 1995.

In specific circumstances, the cost of certain investments, for example new plant and equipment can be offset against profits in the early years of their operation. This is known as *capital allowance*. For instance if a large item of equipment was bought for £8,000 the company would qualify for a capital allowance in the first year of £2,000, reducing the taxable profits from £15,000 to £13,000 and the amount of tax paid from £5250 to £4550, a difference of £700.

The rates of capital allowances at the time of writing are:

Industrial premises: 4% annual allowance on straight-line basis for 25 years
Plant and equipment: 25% annual allowance on a reducing balance basis
Vehicles: 25% annual allowance on a reducing balance basis.

Profits from partnerships and the self-employed are classed under the income tax system. The same capital allowances are available, but taxable profit is calculated on a different basis. For example the salary or drawings paid to the partners is disallowed when calculating taxable profit, the taxation rate is either 25% or 40% depending on the level of earnings (at the time of writing), and tax becomes payable within three months of the year end.

So corporation tax affects the cash flow from investments in two ways:

- tax on the additional profits has to be paid in the following year
- capital allowances may reduce the cost of the project by allowing a deduction to be made from the tax payable.

The taxable profits from T H Thomas Ltd amount to £173,060 in 1994. Work out below what the corporation tax liability is and when it will be required for payment. (Assume for this exercise that the rate of tax is as quoted on the previous page.)

You have now found out that T H Thomas purchased a new washing machine in 1994 for the sum of £19,780. Recalculate the tax liability. (Use the capital allowance rates quoted on the previous page.)

What is the saving on tax now that the washing machine purchase has been taken into account?

T H Thomas Ltd will have to pay £60,571 in corporation tax in 1995 (35% x £173,060).

The capital allowance on the washing machine reduces the tax payable to £58,840:

Profit	173,060
less capital allowance	
25% of £79,780	4,945
	168,115
Corporation tax at 35%	58,840

The saving is £1731.

Value added tax

VAT is generally excluded when calculating cash flows. Major purchases may have to be timed carefully especially if there is a delay between paying the VAT to the supplier and collecting VAT from customers.

This delay could be considerable in the following cases, all of which involve paying VAT at the time of the transaction:

- purchase (or sale) of building land
- construction of a new building
- purchase of a new building.

In each case the initial investment will require 15% more cash (the VAT rate at the time of writing).

An example was given earlier in this section (page 47) of the cash flows resulting from the purchase of a vending machine for use in a NHS hospital. Consider the same investment project in the private sector when corporation tax liability has to be taken into account.

If, to make the comparison straightforward, a capital allowance of £100 per year is assumed and the rate of corporation tax is 35% the effect on the cash flow would be as follows:

Year	Cash in	Cash out	Increase in profit	Capital allow-ance	Increase in		Net cash flow
					Taxable profit	Tax paid	
0		6160					- 6160
1	2000	1100	900	100	800	Nil	+ 900
2	2000	1100	900	100	800	280	+ 620
3	2000	1100	900	100	800	280	+ 620
4	2000	1100	900	100	800	280	+ 620
5	2000	1100	900	100	800	280	+ 620
6	2000	1100	900	100	800	280	+ 620
7	2000	1100	900	100	800	280	+ 620
8	2000	1100	900	100	800	280	+ 620
9	2000	1100	900	100	800	280	+ 620
10	2000	1100	900	100	800	280	+ 620
11						280	- 280
	20,000	17,160	9000	1000	8000	2800	+ 40

A comparison with the NHS example shows what a marked effect corporation tax can have on cash flows.

The Crown Hotel is considering buying a computer which will handle advance reservations, arrivals, departures and guest billing. It would save one full-time member of staff at a cost of £15,000 per annum. The new computer will cost £18,000 plus an additional £1600 installation charge. Initial staff training will cost £1000. The insurance and maintenance agreement will cost £800 per year and extra stationery and supplies will cost £600 per year.

Calculate below the cash flows resulting from this investment during the first five years. Assume that the Crown Hotel pays 35% corporation tax and that the purchase of the computer is eligible for a capital allowance of 25% annually on a reducing balance. (You may find it helpful to start by calculating the capital allowance which can be offset against profit in each year.)

Assume that no capital allowance can be claimed on the installation or training costs. (Remember that tax on profits is paid the following year, so the tax due on the extra profits made by the Crown Hotel in year 1 — after taking into account the capital allowance — is paid in year 2.)

The capital allowance each year is calculated on the reducing balance method:

Cost of computer	18,000
25% allowance year 1	4,500
	13,500
25% allowance year 2	3,375
	10,125
25% allowance year 3	2,531
	7,594
25% allowance year 4	1,898
	5,696
25% allowance year 5	1,424
	4,272

The capital allowance does not of course affect the cash flow but the calculation of taxable profits (on which tax is paid the following year).

Year	Cash in	Cash out	Increase in profits	Capital allow-ance	Increase in Taxable profits	Tax paid	Net cash flow
0		23,000					- 23,000
1	15,000	1,400	13,600	4,500	9,100	Nil	+ 13,600
2	15,000	1,400	13,600	3,375	10,225	3,185	+ 10,415
3	15,000	1,400	13,600	2,531	11,069	3,579	+ 10,021
4	15,000	1,400	13,600	1,898	11,702	3,874	+ 9,726
5	15,000	1,400	13,600	1,424	12,176	4,096	+ 9,504
6						4,262	

The method used for the Crown Hotel computer of writing down the value by 25% each year is probably unrealistic. If the computer is expected to be replaced within five years or less the capital allowance can be brought into line with the likely life of the equipment.

DISCOUNTED TAX FLOW

Money received in the future is less valuable than money received in the present because:

- money received today is certain, whereas there is a degree of risk involved in any transaction due to take place in the future
- the value of money received in future is likely to have a lower purchasing power due to inflation
- money received today can be invested and interest earned.

If you were to invest £100 today at 10% interest your money would increase to:

£110 after one year
£121 after two years
£133 after three years
£146 after four years and so forth.

In order to make a proper evaluation of an investment project a comparison must be made between:

- money spent now (on the investment)
- the present-day value of money which will be earned by the investment in future years.

This means discounting the value of future earnings.

> Inflation causes some difficulty when estimating future cash flows. For instance if the annual rate of inflation is 7% the earnings from the investment of £100 will drop from 10% to 3%. If inflation is 12% the value of the investment will actually decline, dropping 2% in value each year.

Your investment of £100 will be worth £110 in one year's time. On the same assumption — interest at 10% and zero inflation — work out below what the present-day value would be of £100 you expect to receive in a year's time.

£100 received in one year's time has a present day value of £90.90. If Y is the present-day value, then:

$$Y + Y \times \frac{10}{100} = 100 \qquad \frac{Y(100 + 10)}{100} = 100 \qquad Y = 100 \times \frac{100}{110} = 90.90$$

or, more simply:

$$\frac{100}{1.10} = 90.90$$

So, assuming an interest rate of 10% and zero inflation there is no difference between £90.90 received today and £100 received in one year's time, or £1 today and £0.909 in a year. The figure of 0.909 is called the *discount factor* and can be used to discount the value of money received in the future in order to express it at present-day values. For example, on the same assumptions, £368 received in one year's time would be equivalent to £335 today:

$$368 \times 0.909 = 335$$

Discount factor tables can be used to discount the value of money received in the future. In the following table the present value of 1.0 unit is discounted for different rates of discount up to 12 years in the future.

Year	Rate of discount							
	8%	9%	10%	11%	12%	13%	14%	15%
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870
2	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756
3	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658
4	0.735	0.706	0.683	0.659	0.636	0.613	0.592	0.572
5	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497
6	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432
7	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376
8	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327
9	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284
10	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247
11	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215
12	0.397	0.356	0.319	0.286	0.257	0.231	0.204	0.187

Using the above table, calculate the present-day value of the following:

Amount £	*Rate of discount* %	*Years* No	*Present-day value* £
100	*10*	*1*	
100	*10*	*7*	
100	*12*	*7*	
340	*12*	*7*	
470	*14*	*4*	

Amount £	Rate of discount %	Years No	Present-day value £
100	10	1	90.90
100	10	7	51.30
100	12	7	45.20
340	12	7	153.68
470	14	4	278.24

Discount factor tables are invaluable when working out the present-day value of future cash flows.

To assess a potential investment scheme, discount factors are applied to the projected future cash flows. Each year's cash flow is expressed in its present-day value which means a more realistic assessment can be made of the cost of the scheme.

You have already examined the projected cash flow resulting from a proposal to install a vending machine in a health club. The initial cost of the project was £6160 and the future cash flows were estimated after taking taxation into account (see page 54). Assuming a discount rate of 10% the future cash flows can be discounted to present values.

Year	Net cash flow	Discount factor	Discounted cash flow
0	- 6160	1.00	- 6160.00
1	900	0.909	+ 818.10
2	620	0.826	+ 512.12
3	620	0.751	+ 465.62
4	620	0.683	+ 423.46
5	620	0.621	+ 385.02
6	620	0.564	+ 349.68
7	620	0.513	+ 318.06
8	620	0.467	+ 289.54
9	620	0.424	+ 262.88
10	620	0.386	+ 239.32
10	280	0.350	+ 98.00
			- 1998.20

Clearly on these assumptions the project would not make wise use of the company's money.

A leisure company is considering two alternative projects, each of which would cost £40,000. The table below shows the net cash flow from the two projects. If the discount rate is 12% indicate the discounted cash flow for each year of the project and state which project offers the best investment. (You may wish to refer to the table on page 59.)

Year	Discount factor	Project A		Project B	
		Cash flow	Discounted Cash flow	Cash flow	Discounted Cash flow
1		20,000		60,000	
2		30,000		50,000	
3		40,000		40,000	
4		60,000		30,000	
5		60,000		20,000	
Total		210,000		200,000	

Year	Discount factor	Project A		Project B	
		Cash flow	Discounted Cash flow	Cash flow	Discounted Cash flow
1	0.893	20,000	17,860	60,000	53,580
2	0.797	30,000	23,910	50,000	39,850
3	0.712	40,000	28,480	40,000	28,480
4	0.636	60,000	38,160	30,000	19,080
5	0.567	60,000	34,020	20,000	11,340
Total		210,000	142,430	200,000	152,330

Project B gives the higher discounted cash flow. The reason for this perhaps surprising result is that Project B generates more cash in the first few years.

The choice of discount factor is mainly determined by the costs of acquiring the capital necessary for the investment. For a project which is financed by a bank loan, the discount rate should not be less than the rate of interest paid to the bank. When the project is financed by internal resources most companies use a discount factor that is at least as great as the highest return which can be gained from alternative forms of investment. The larger companies have quite detailed guidelines for assessing capital projects.

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